INTEGRATED RESOURCE PLAN

Meeting B.C.'s Future Electricity Needs

Public and Stakeholder Consultation Report

For the September 3 to October 18, 2013 Consultation Period

November 15, 2013

BC hydro

FOR GENERATIONS

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1. INTRODUCTION

The Integrated Resource Plan (IRP) is BC Hydro's long-term plan for acquiring the resources needed to meet customers' demand for electricity over the next 20 years. Integrated electricity systems are inherently complex and capital intensive and most new resources require significant lead times to develop. As a result, electric utilities such as BC Hydro must plan ahead to ensure the required resources will be in place when needed.

According to B.C.'s *Clean Energy Act*, BC Hydro is required to submit its plan to government at least once every five years, and may submit periodic updates in the interim period.

2. OVERVIEW OF CONSULTATION PROCESS

The consultation process for the IRP included four phases described below. Note that during each phase, there were three separate streams of consultation: public and stakeholder, First Nations and a technical consultation stream involving the IRP Technical Advisory Committee (**TAC**). This consultation report focuses on the feedback collected from the public and stakeholders in the last of the four phases. Separate reports have been prepared based on the written comments received from First Nations and from the IRP TAC.

Technical Review and Foundation for Integrated Resource Planning (Fall 2010)

In the first phase of developing the IRP, BC Hydro focused on assembling key pieces of technical data necessary to construct a plan, and sought input from selected First Nations and stakeholders with regard to the design of the consultation process. BC Hydro also worked with its Electricity Conservation and Efficiency Advisory Committee as it constructed options for energy conservation. An IRP TAC was also established to assist BC Hydro by providing detailed technical advisory input and feedback. Reports on consultation from this period are available online at http://www.bchydro.com/energy-in-bc/meeting_demand_growth/irp/development_process/fall2010.html.

Considering Our Clean Energy Future—Assessing and Evaluating Options (March/April 2011)

In March and April 2011, BC Hydro gathered public and stakeholder input for the development of the draft IRP. BC Hydro asked the public, stakeholders and First Nations to consider the topics that were being addressed in the IRP: BC Hydro's approach to conservation and efficiency, electricity generation options, electrification, planning transmission and export market potential. Input received through consultation was considered along with technical, financial, environmental and economic development input as BC Hydro evaluated alternatives and prepared the draft IRP. Reports on consultation from this period are available online at http://www.bchydro.com/energy-in-bc/meeting_demand_growth/irp/development_process/spring2011.html.

Reviewing the Draft Integrated Resource Plan (May-August 2012)

In this phase, the public, stakeholders and First Nations were invited to provide feedback on the draft IRP. As part of this process, BC Hydro sought feedback on 11 recommended actions of the IRP, associated with: Conserving More, Building and Reinvesting More, Buying More and Preparing for Potentially Greater Demand. Reports on consultation from this period are available online at http://www.bchydro.com/energy-in-bc/meeting_demand_growth/irp/development_process/spring2012.html.

Written Comment Period on the August 2013 Integrated Resource Plan (September 3 to October 18, 2013)

The August 2013 IRP was submitted to the provincial government on August 2, 2013. In a letter dated August 23, 2013, (Appendix A) the B.C. Minister of Energy and Mines (Minister) instructed BC Hydro to provide public notice it had submitted the IRP to Government, to provide public access to the IRP and to conduct a final round of consultation related to the IRP by October 18, before re-submitting the IRP to government by November 15, 2013. In the letter, the Minister noted that "while the consultations should cover the IRP in its entirety, of particular interest is feedback on the changes to the IRP since BC Hydro undertook consultations in spring and summer 2012, and on uncertainty over the 20-year period and the contingency plans BC Hydro is proposing to deal with that uncertainty."

From September 3 to October 18, BC Hydro invited written feedback from the public, stakeholders and First Nations. Comments collected during this period were considered as BC Hydro finalized the IRP for submission to government for approval by November 15, 2013.

3. CONSULTATION METHODOLOGY

The IRP submitted to government on August 2, along with a summary document, were made publicly available on BC Hydro's website following the provincial news release on August 23. On August 26 BC Hydro notified stakeholders who had participated in previous rounds of the IRP consultation and members of the public who had requested to be on the IRP mailing list (800 people) of the upcoming written comment period by email (Appendix B). In addition, notification was delivered to 220,000 customers through its customer e-newsletter (Appendix B) on September 7, along with 800 recipients of BC Hydro's annual community relations reports during the week of September 10. A reminder notification was sent on September 24. Note that a few interested stakeholder groups also promoted the opportunity to provide comment by advising their members of the notification, as evidenced by a high proportion of identical responses under the topic areas.

Feedback was sought from public and stakeholders through an online written comment form available on BC Hydro's website and by email. Participants were asked to provide their level of support with BC Hydro's recommended actions under the following topic areas: Supporting Liquefied Natural Gas, Conserving First, Powering Tomorrow, Managing Resources, and Planning for the Unexpected. Participants were asked to provide the reasons for their level of agreement and/or to provide additional comments under each section, as well as to provide any additional comments under a general comment section. A copy of the comment form is available in Appendix C.

Note that views collected during the comment period and contained in this report reflect the priorities and concerns of members of the public and stakeholders who chose to provide written comments. As with other consultation processes, they are not necessarily representative of the views of the public and other stakeholders because participants self-selected into the consultation process.

4. SUMMARY OF ONLINE FEEDBACK FORM RESPONSES

During the written comment period, BC Hydro received 425 completed comment forms from members of the public and stakeholders.

These responses are contained in Appendix D. Names and other personal information of private individuals are not included in this report. Providing this information was made optional in the online written comment form, and participants were advised it would be collected only for the purposes of keeping them informed of future consultations on integrated resource planning.

The following is a summary of written comments received through the online feedback form between September 3 and October 18, 2013. The large majority of respondents took the time to provide written comments under each topic area to explain their broad level of agreement with the recommended actions, and these written comments have been used in developing the summary below.

Supporting LNG

Participants were asked to provide their level of support for BC Hydro's recommended actions to: "support the Liquefied Natural Gas (LNG) industry" by reinforcing an existing 500 kilovolt transmission line from Prince George to Terrace; working with industry to explore natural gas supply options on the north coast to enhance transmission reliability to help meet the expected load; and being prepared to acquire clean energy supply in the future if LNG needs exceed existing, contracted supply. Participants were asked to indicate the reasons for their level of agreement and/or provide additional comments on the complete set of recommended actions on supporting LNG.

The large majority of respondents who completed the comment form responded with strong disagreement. It is evident from the responses received that the respondents who voiced strong disagreement did so because of their lack of support for the LNG industry versus a specific, secondary lack of support for BC Hydro's recommended actions designed to ensure electricity is available to serve the LNG industry should it be needed. Reasons given for lack of support for the LNG industry included the following themes: LNG is not a clean energy source, fracking has negative environmental impacts, and the economic benefits are doubtful. Specific to electricity service from BC Hydro to the LNG industry, themes included BC Hydro should not subsidize the LNG industry with low-cost electricity and the focus should be on clean energy alternatives such as wind versus gas.

Those who responded with support did so because of support for the LNG industry versus specific support for BC Hydro's recommended actions designed to ensure electricity is available to serve the LNG industry should it be needed. The primary reasons given for support for the LNG industry were jobs and economic prosperity for B.C.

Conserving First

Participants were asked to provide their level of support with BC Hydro's recommended actions: to support 'conserving first' by maintaining BC Hydro's demand-side management measures at the same level going forward as has been undertaken in recent years, and preparing to increase these measures as load increases. BC Hydro is relying on all three customer classes to undertake demand-side activities and meet our 7,800 gigawatt hour target in fiscal 2021. Participants were asked to indicate the reasons for their level of agreement and/or provide additional comments on the complete set of recommended actions on conserving first.

The majority of respondents voiced strong support for these recommended actions. Reasons voiced included that conservation is the best, most cost-effective way to meet future energy needs, it reduces waste, it has the least negative consequences and it's a win-win (lower bills). At the same time as providing strong agreement, many of these respondents voiced the opinion that BC Hydro was not doing enough. Ideas provided for what BC Hydro could do more of included time-of-use rates, peak shaving, policies to encourage big business and industry to conserve more, model European standards and processes, and encourage conservation through higher prices as well as more education and promotion of the use of new building technologies.

Many of those who voiced disagreement with this recommended action provided comments that were generally aligned with those that agreed with this recommended. In essence they support conservation and would like to see more done. Other reasons given for disagreement included: lack of confidence conservation goals could be achieved, the lack of affordability of energy efficiency technologies, and a preference for clean energy technologies over conservation. There was also concern that if prices were increased as a way to encourage customers to conserve, this would have a negative effect on low/fixed income customers.

Powering Tomorrow

Participants were asked to provide their level of support for BC Hydro's recommended actions to: 'power tomorrow' by building Site C, a proposed

third dam and generating station on the Peace River, which would provide cost-effective, reliable and renewable electricity for generations. Participants were asked to indicate the reasons for their level of agreement and/or provide additional comments on the complete set of recommended actions on powering tomorrow.

The large majority of respondents who completed the comment form responded with strong disagreement with the recommended action to advance Site C. Reasons given included lack of demonstrated need; the flooding of agricultural land, wildlife habitat and First Nations heritage sites in the Peace River Valley; lack of affordability; and lack of First Nations support. Many respondents believed that Site C is being built to serve projected LNG load, which they expressed opposition to in the first question. Some respondents encouraged BC Hydro to look to alternative energy options such as wind, tidal, geothermal and solar instead of building Site C.

With regard to those who voiced support for Site C, reasons included: it's the best source of clean, economical energy and it is smart economics because it uses a developed river system. Amongst those that neither agreed nor disagreed, it was remarked that they lack understanding of the cost to build Site C.

Managing Resources

Participants were asked to provide their level of support for BC Hydro's recommended action: to 'manage resources' by managing the costs associated with BC Hydro's current energy portfolio of Electricity Purchase Agreements and selecting the most-cost effective plan to meet customers' needs within the context of the Clean Energy Act. In the background it was explained that Independent Power Producers (IPPs) currently supply about 20 per cent of BC Hydro customers' electricity requirements. Participants were asked to indicate the reasons for their level of agreement and/or provide additional comments on the complete set of recommended actions on managing resources.

The majority of respondents who completed the comment form responded with strong disagreement. It is apparent from the responses that this disagreement stemmed largely from opposition to IPP energy outright. They remarked that BC Hydro should cancel all IPP contracts because of negative impacts of run-of-river developments on fish and wildlife habitat and the price BC Hydro pays for the energy being too high. Other reasons for disagreement included that cost effectiveness does not have to be at the expense of environmental impacts and that protecting the environment is a

higher priority than electricity being low cost. A number of respondents noted that BC Hydro should move away from IPP contracts and invest in its own development of renewable resources such as wind, solar, geothermal and ocean energy, with particular emphasis on wind and solar energy.

Amongst those that supported this recommend action, the primary reasons given were support for the development of the renewable energy sector in B.C., economic development, and benefits to First Nations.

A significant portion of respondents indicated that they did not understand what was being asked of them and that the question was unclear.

Planning for the Unexpected

Participants were asked to provide their level of support for BC Hydro's contingency plans that: continue to advance capacity resource options, including advancing the Revelstoke Generating Station Unit 6 Resource Smart Project; the GM Shrum Station Resource Smart Project; and working with industry to explore natural gas supply options. Participants were asked to indicate the reasons for their level of agreement and/or provide additional comments on the complete set of recommended actions on planning for the unexpected.

Respondents were largely supportive of upgrading existing infrastructure and using existing dams to their full potential. From the written comments, it is evident there is greater concern with the proposed contingency plan to work with industry to explore natural gas because of climate change concerns, while the proposed contingency actions to advance the Revelstoke Generating Station Unit 6 and the GM Shrum Generating Station Resource Smart Projects are supported. These split views are reflected in both the "somewhat agree" and "disagree" response sets.

A number of respondents indicated that they did not have enough knowledge to respond to this question or that there was a lack of information to allow them to respond. It is also evident from the responses that there is frequently a lack of understanding of the differences between electrical energy and capacity.

5. SUMMARY OF OTHER WRITTEN RESPONSES

Beyond submissions received through the online feedback form, BC Hydro received 344 additional written responses. Of these responses, 308 were submitted by individuals, and 36 from various associations. These responses can be found in Appendix E.

Responses from Individuals

BC Hydro received 308 written submissions from individuals of which 270 contained identical responses opposed to Site C, with another 34 submissions containing similar responses but with additional comments included. These written submissions expressed opposition to plans to build Site C in the Peace River Valley and stated their belief that Site C is not needed for domestic consumption but rather for powering the LNG industry. They expressed concern for the rate impacts of building Site C and for the environmental and social impacts that Site C would have, including the flooding of agricultural land, wildlife habitat and First Nations heritage sites. They also encouraged the provincial government to return Site C and other exempted projects to BCUC oversight; and for BC Hydro to consider other renewable sources of energy over Site C.

The other four written submissions included comments expressing opposition to the development and electrification of the LNG industry, preferences for further Demand Side Management options and fewer IPP contracts, opposition to Site C, and support for the renewable energy industry.

Responses from Organizations

Of the 36 letters received from organizations, 31 were from the clean energy sector. The prevailing concern was that the IRP provided limited opportunities for IPPs and limited economic development opportunities related to IPP projects for First Nations. Some expressed concern that deliverability risks of DSM are too high and that the electricity savings from DSM measures were overstated. Several commenters recommended that BC Hydro should revisit its load forecast as they believed that the amount of required energy forecast was too low, particularly the amount of energy BC Hydro estimated would be required to serve the LNG industry. The Clean Energy Act and the commitment to greenhouse gas reductions were cited as driving factors for BC Hydro to bear in mind when considering the benefits of IPPs. Many expressed concern that IPP alternatives to Site C were not accurately portrayed or assessed and that BC Hydro should consider underutilized renewable sources, such as wind, ocean energy, geothermal, and pumped storage to diversify supply. Many expressed the view that BC Hydro should do more to advance the interests of specific technologies,

advance the opportunities for clean energy projects to serve new northern industrial loads, and consider providing all electric solutions for LNG facilities with IPP electricity.

BC Hydro also received five letters from environmental organizations, large customers and local governments. These letters covered issues such as opposition to building Site C and plans for the LNG industry, while encouraging further emphasis on DSM options and renewable energy. In addition, concern was raised that rate uncertainty and potential increases negatively impact business competitiveness with other jurisdictions. One organization provided a detailed critique of BC Hydro's DSM plans and encouraged further study.

List of Organizations		
Aeolis Wind Power Corporation	Chinook Power Corp.	Marine Renewables Canada
AltaGas Ltd.	Clean Balance Power Inc.	Peace Valley Environmental Association
Association of Consulting Engineering Companies	ENERCON Canada Inc.	Regional District of Nanaimo
BC Advanced Conservation & Efficiency Association	Finavera Wind Energy	Renewable Energy Systems Canada Inc.
Belkorp Environmental Services Inc.	Fortis BC	Rupert Peace Power Corp.
Boralex Inc.	Fraser Valley Regional District	Sea Breeze Power Projects Inc.
Brookfield Renewable Energy Group	GDF SUEZ Canada Inc.	Siemens Canada Limited
Burke Mountain Naturalists	GE Canada	SRM Projects Ltd.
Canadian Association of Petroleum Producers	GL Gerrard Hassan	Timber West Forest Corp. and EDP Renewables North America LLC
Canadian Geothermal Energy Association	Hudson's Hope	United Flower Growers Co-operative Association BC Greenhouse Growers' Association
Canadian Wind Energy Association	Innergex Renewable Energy Inc.	Western Tidal Holdings Ltd.
Catalyst Paper Corporation	M.K. Ince and Associates Ltd.	wpd Mountain Wind Inc.

6. APPENDICES

A. Letter from Minister
B. Notifications
C. Online Feedback Form
D. Online Feedback Form Responses
E. Other Written Responses